EMR
SINGLE CRYSTAL SILICON SHEET GROWTH

TOMORROWS TECHNOLOGY
FOR
SOLAR ENERGY
AND
ELECTRONICS GRADE SILICON

EMR
ENERGY MATERIALS RESEARCH
INTRODUCTIONS

- **DR. Carl Bleil, President of EMR**
- **Owner and Developer of the SINGLE CRYSTAL SILICON SHEET GROWTH PROCESS**
- **PhD in Physics with 30 Years Experience as Scientist for the GM Research Laboratories**
- **Inventor-of-Record on 16 Patents**
- **Owner of Six Key Patents on the SCSSG Process**
- **Resides in Rochester Hills, Michigan.**

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START UP

- **New Corporate Management Team**

- Chief Scientist & Founder: **Carl Bleil** PhD in Physics
- CEO: **Ted Belden,** Top Managerial Experience at IBM & NCR, BS in Physics
- CFO: **Dana Murphy,** CFO & CEO experience in Large Companies and Start Ups
- VP Operations : **David Mark**, CEO of Commercial Construction Company, MBA, BS Engineering

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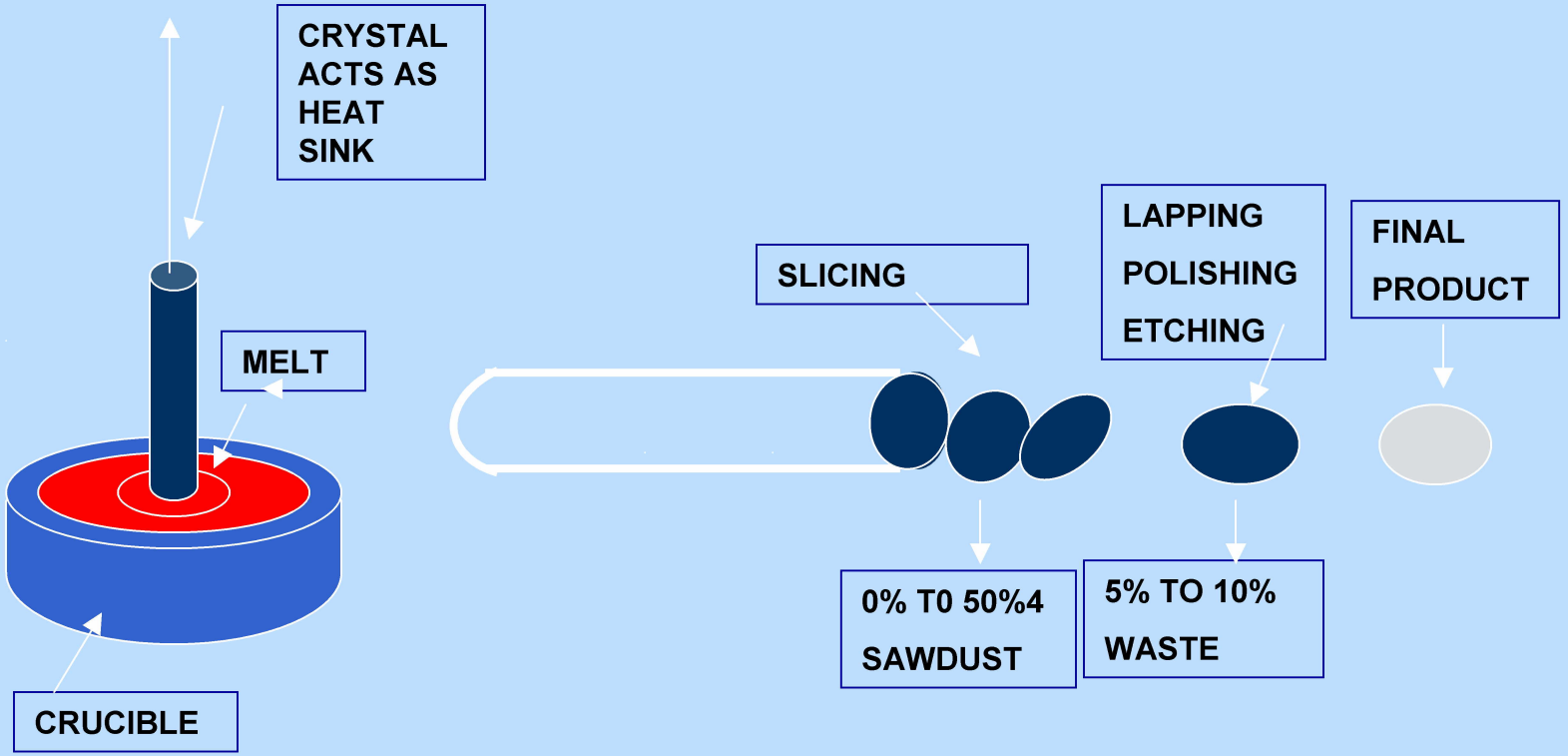
CZOCHRALSKI CRYSTAL GROWTH METHOD



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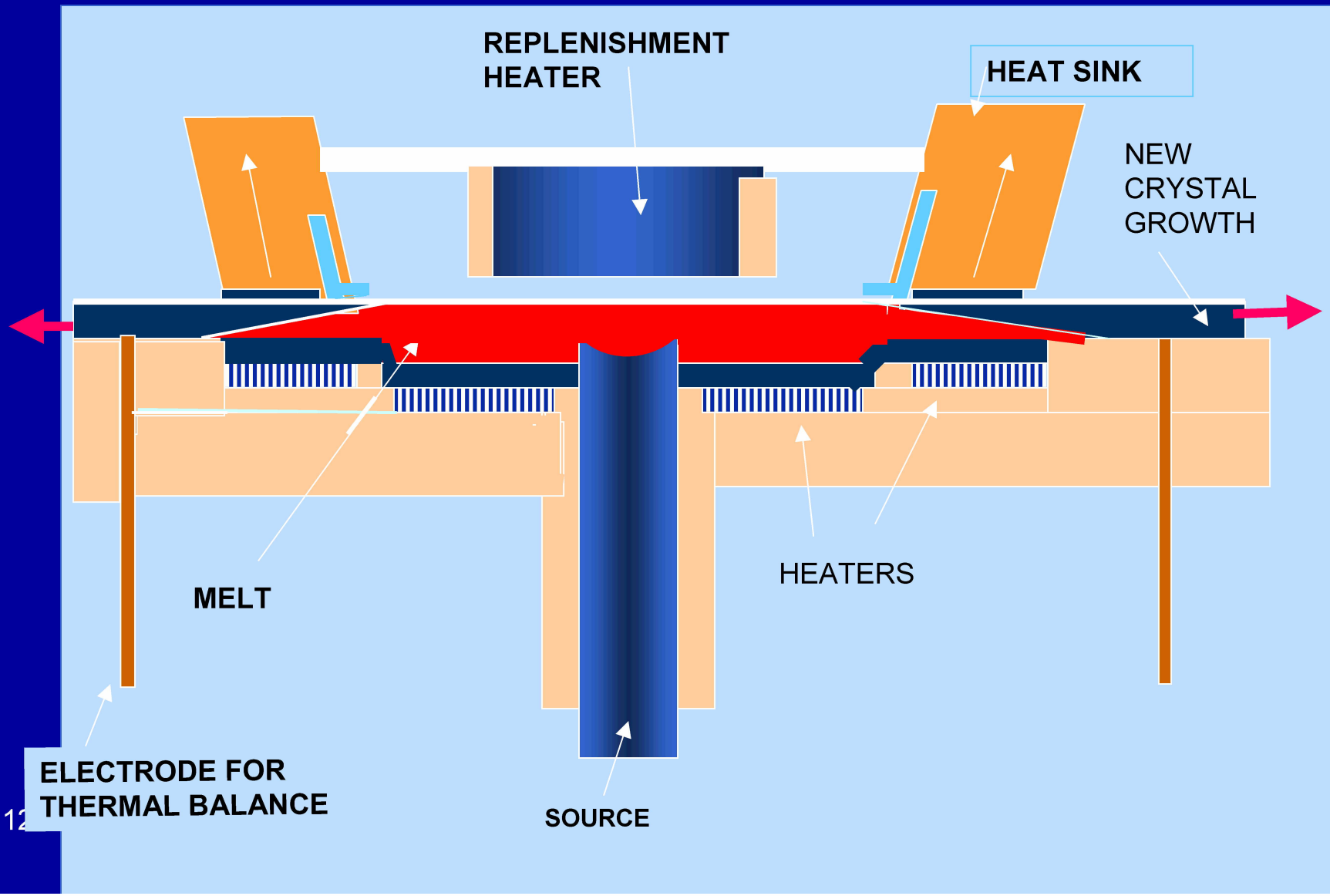
SINGLE CRYSTAL PROCESSOR



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INITIAL MARKET AGENDA

- Market Selection: Photovoltaic
- Competitors
- Market Size
- Project Status
- Opportunities and Risks
- Project Plan

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PROJECT PLAN YEAR 1

- Acquire the space, personnel and equipment to accomplish processor assembly and test production.
- Begin production for material evaluation.
- Begin an aggressive marketing program for year 2 and promote the licensing option.
- Continuously assess market penetration rate potential and adjust planning accordingly

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PROJECT PLAN YEAR 2

- **Ramp up to full production. Sell and ship this production level to the photovoltaic market.**
- **Extend product evaluation for the electronics market**
- **Establish licensing for EMR processors, including technical preparation for processor assembly at licensee's location.**
- **Sign our first licensing agreement(s)**

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PROJECT PLAN YEAR 3

- Sales and sheet production at full capacity.
- Install and bring first licensee processor on line and up to speed
- Continue licensee sales and installations
- Conduct experimental work with other promising materials

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Financial Projections

From the information available about the sale of silicon to the photovoltaic industry in 2001, we can calculate the **average sale price***for:

* Based on module = 260W/m^2 and Cell = 360W/m^2

- Single crystal (CZO Process) silicon sheet/wafer $**898/m^2**
- Using 60% of price as a norm for **manufacturing cost** and estimated cost of p-n formation and electrode deposition =$40/$m^2$
- Single crystal silicon sheet CZO cost **$500/m^2**

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- The **EMR** projected manufacturing cost for Single Crystal silicon sheet is **$250/m^2**

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Financial Projections

- Utilizing these figures we can calculate the **profit margins** available to EMR

EMR Sales Price Relative to	Sales Price $/m^2	EMR Cost $/m^2	Gr. Profit $/m^2	EMR Gross Profit %
@ CZO price	700	250	450	**64.3**
@ .8 * CZO price	560	250	310	**55.4**
@ .6 * CZO price	420	250	170	**40.5**
@ .5 * CZO price	350	250	100	**28.6**

- These margins allow **EMR** to be **the price leader** in a highly competitive market.